

Tourism Destination Development and Uses of Information & Communication Technology Based Applications

Lakhvinder Singh¹, Dinesh Dhankhar²

Research Scholar, Department of Tourism & Hotel Management,
Kurukshetra University Kurukshetra¹
Assistant Professor, Department of Tourism & Hotel Management,
Kurukshetra University, Kurukshetra²

Abstract

The tourism industry has widely adopted information and communication technology (ICT) to enhance operational competencies, service quality and customer experiences. This paper presents research which developed Information and Communication Technology as a practical and modern approach to tourism destination development. It identified that several opportunities existed in destination management for using ICT based applications for managing different aspects of tourism development. The present study is based on the primary research i.e. surveys directed to destination managers and e-tourism professionals followed by semi-structured interviews with experts in this sphere. The conclusion of this research clearly identifies that destination managers can adopt the applications of ICT as a logical and practical step for tourism development and earn effective business for their destinations.

Keywords: Tourism, information & communication technology (ICT), destination management, service quality, e-tourism.

Introduction

Tourism is reputed to be the world's largest industry. Its revenues support a significant proportion of the economies of many nations and it is one of the largest employers worldwide. Its contribution to gross national product, employment and regional development are well recognized and it is forecast to grow in importance in the coming decades as leisure time increases (Tahayori & Moharrer, 2006).

Tourism is acknowledged to be very information exhaustive. Tourists need information before going on a trip to help them plan and choose between options, and also during the trip as the trend towards more independent travel increases. Since travelers cannot pre-test the products/services as it is intangible, access to accurate, reliable, timely and relevant information & communication is essential

to help them make a suitable choice (Tahayori & Moharrer, 2006). So, ICT plays an essential role in selection of destination to be visited.

The tourism industry can be seen as one of the first business sectors where business functions are almost exclusively using information and communications technologies (ICT) (Garzotto et al. 2004). Computerized reservations Systems (CRS) were among the first applications of IT worldwide in tourism sector.

Tourism & ICT

Information & communication technology (ICTS) means the use of computer system and telecommunication equipment in information processing. It is the combination of computer, communication and electronics to acquire, process, store and disseminate vocal, textual, pictorial and numerical information by micro- electronic- based equipments.

Tourism suppliers have traditionally provided relevant information in the form of print based media which is costly, time consuming and labor intensive. In addition, such information is static, while much of the data needed to required before consumption of tourist product or services. As a result, consumers usually have to contact the supplier directly to ensure that the product is available and to confirm the rate at which it will be sold. Again, access to timely and accurate information is important at this stage (Tahayori & Moharrer, 2006). The success of a business, to certain extent, depends on its ability to acquire and utilize updated information to assist its management and marketing processes. Hence, Information & Communication Technology (ICT) assists organization to manage information dynamically and influences business competitiveness through assisting decision makers to make appropriate investments and decisions.

Many authors (Kim & Ham, 2007; Singh et al.2006; Winata & Mia, 2005) believed that the presence of ICT systems assist managers to deliver quality service to their customers and to enhance operational efficiency and control costs. Information technology act as a protector and enhancer directly influences the experiences and behavior of tourists at the destinations.

ICT and Tourism Destination Development

Tourism destinations are those places that are assumed to be unique and different from the everyday experience. One has to travel to the place of consumption to experience the tourism service or product. Tourism services are largely based on communication between the supplier and the consumer which is improved by providing the information about the product, which is available in advance to the

consumer. This mechanism leads to the establishment of specific product distribution and long information and value adding chains. (Werthner & Klein 1999). ICT play a key role for both tourist and destination managers in gathering information about tourist site as well its surrounding and amenities provided there on. It is advantageous for tourism and hospitality managers in general to be aware of the recent changes in IT and their relationship with customer service.

The use of ICTs is a relevant opportunity for growing and strengthening a local tourism industry, and for the development of destinations economies overall. Specifically ICTs have the potential to increase destination incomes for financing economic and social development in (UNCTAD, 2005). ICTs allow destinations to improve online presence and offline connectivity which required to compete in global tourism market. More specifically the beneficial effects of ICTs are to provide direct, cheap and effective access to (actual and potential) customers. At the same time ICTs make profitable to use multiple distribution channels and target niche markets.

But for this mere an improvement of ICT infrastructures is not enough. Even an appropriate endowment of *e-skills* is necessary but without adopting complementary changes in organizational settings and structures to fit them with destination's management activities that must be redefined and new ICT-enabled organizational models developed.

In developing countries, tourism organizations that have failed up to a certain extent to master the right information technology (IT) systems would find it difficult to direct and manage their information-intensive businesses without damaging their competitiveness (Law and Jogaratnam, 2005). Developments in search engines, and in the carrying capacity and speed of networks, have influenced the number of travelers around the world that use technologies for planning and experiencing their travels.

Tourism and hospitality are social phenomena, and the industries associated with them are largely application oriented. ICTs thus play a critical role in the competitiveness of tourism organizations and destinations as well as in the entire industry as a whole (UNWTO, 2001).

As investment in and the adoption of ICTs are now an indispensable component of tourism and hospitality business, researchers increasingly seek to understand and communicate the significance of the new technologies, investigate and interpret developments in e Tourism, and attempt to forecast the way ahead for both industry and technological development. More and more, destination management organizations (DMOs) use ICTs in order to facilitate the tourist experience before, during and after the visit, as well as for coordinating all partners involved in the production and delivery of tourism

(Buhalis,1997). Thus, ICTs utilized to promote tourism policy, coordinate operational functions, increase the expenditure of tourists and boost the multiplier effects in the local economy.

Destination management systems (DMSs) facilitate this function by administrating a wide range of requests and by providing information on an ever-increasing supply of tourism products, in an efficient and appropriate way (UNWTO, 2001; UNWTO, 2008).

The present research is therefore adopting a destination focused perspective and proposes to investigate the ICT-based tools/applications that can be used to manage the impacts of tourism at the destination level. New technologies offer considerable promise for dealing with promotion of economic growth (OECD, 2002). The research gap will be addressed by developing assessment procedures for ICT-based tools/applications for destination managers in tourism development.

This research is aimed at creating a new and more efficient way of managing tourism at a destination. This contributes to widens the range of options which they can use to inform policy on how best to manage the development of their destinations. Lastly, it impacts on practice by discussing a realistic approach which destination managers can implement to translate the theory of development into practical results for their destinations.

Literature Review

ICTs are changing significantly the ways in which traditional destination management activities (i.e., Planning, Development, Marketing, Promotion, Delivery, Management, Coordination and Monitoring of destination's offering) are being carried out. For example in the past, few DMOs were equipped and/or confident enough to undertake market research. That was rather a domain of costly consultancies. Now with e-mail, websites and online communication, it is undertake customer analysis, measure the effectiveness of an advertising campaign, increasing effectiveness, reducing cost, planning and development of destination management activities as well as to analyze in detail behaviors of tourists.

There is the need for an extension of the role of destination managers in promotion of the destination, the collection and diffusion of statistics and the organization of tourism activities within the destination. In this perspective, destination managers become the key actors in the promotion and diffusion of ICT culture and awareness and in the creation of the necessary organizational capabilities and infrastructures in the tourism industry setting. Organizations dedicated and capable of involving tourism and tourism-related operators, stakeholders devoted them to organize and coordinate activities, promote and ensure the linkages with the other local productive sectors, and manage the technological

services and the necessary. Hooft (2010) stated that tourism destination management can be regarded as a collection of multi-agent processes involving a wide range of stakeholders. It can apply many techniques, collection of marketing and branding processes and strategies to shape the development tourism related activities.

Adaptation of the new and sophisticated technologies such as ICT customizing business processes that are based on cost rationalization and automation of distribution. Using its applicative features, ICT allowed free access in adaptation of small entities to the wander market that used to be reserved just for major market players.

In the last two decades, an evident contribution of ICT in the field of tourism and travelling has been accomplished with necessary adjustments. (Paraskevas and Buhalis, 2002). Its significant impact is evident in the context of spatial and temporal convergence, which is clearly reflected in the reduced time required to achieve greater spatial mobility of people and information.

At the same time, ICT boosts the globalization of industry by providing efficient tools for vendors to develop, operate and globally distribute their offer (Buhalis, 2003). Smaller operators and tourist agents must use the exponential growth of internet users in their business through stronger partnerships and connections, and through the increased efficiency of their functions and high quality services based on the work and knowledge of specialized and trained personnel, which will be manifested in productivity growth (Kogliah et al, 2008; Hashim, 2007)

The most important advantage of ICT is both availability of information to the increasing number of people and reduced production cost due to increased efficiency (Kevin & Stiroh, 2003). Interested market participants share information, specifications, and production process beyond national borders, and thus contribute to greater transparency resulting in lower prices. At the same time, ICT enables tourism destination managers and travel company officials to have access to a number of markets and to use global supply chains in a simple and acceptable way (UNWTO, 2001).

Development of web browsers, data transfer capacity, and network speed had an impact on a number of people worldwide who use technology to plan their trips. ICT driven business reengineering changes the structure of the entire system of tourism and creates a completely new range of opportunities and threats for all participants (Buhalis, 2003). This could result in requirement to create new opportunities and new tourism products according to the criteria of high quality and personalized services (Egger and Buhalis, 2008) accompanied by the creation of new “consumer area”.

It is, therefore, assumed that the complexity and diversity of travel markets require innovative tourism destination managers who coordinate the processes so as to create the economic benefit based market

opportunities by using ICT as transformed forms of communication and applying innovative solutions for direct channels. In that sense, tourism destination managers were actively change the way they do business and hence establish significant competitive advantage to destination. Destination managers who successfully used internet as distribution channel had an easier access to global market, possibility to penetrate new market segments, and encouraged global alliance with the aim of enriching tourist offer, advertising and booking through cross-organizational booking systems.

Tourism stakeholders have to adapt their websites and online bookings to the overall “experience” and expectations of tourists; moreover, future travel agents will have to keep up with competing destinations that offer user friendly activities, values and conveniences. (Mamaghani, 2009).

However, the importance and role of modern technology in the distribution system cannot be denied (both in the process of signing contracts and providing services), which is particularly pronounced in the potential distribution of service segments and integrated tourist products. On the other hand, the gradual increase in ICT dominance in the field of information about destination products and services shows what will be imperative in the future.

This is an additional incentive to involve ICT intermediaries with the aim to inform potential consumers about tourism services, products, and destination. Social networks, forums, discussion groups represent a new platform for obtaining more information about services, which is useful both to tourists and travel planners, while the information about the characteristics of tourists, their expectations and experiences is easily accessible. The satisfaction of tourists and their behavior depend on the response of online inquiries, and it is well known that responsible reactions and fast responses to enquiries are essential for success of small and medium enterprises (Beldona et al. 2005; Pechlaner et al. 2002).

Moreover, destination managers are faced on a daily basis with numerous challenges and decisions with respect to the proper planning and developing of their destinations. They need to be equipped with practical tools and mechanisms to ensure the most accurate and reliable decisions with respect to the tourism development of their destinations. The application of ICT to tourism development can be the useful mechanism that destination managers require. Likewise, the solution for tourism development will not come from advocacy, environmentalists or governments but rather the persons charged with its responsibility and development i.e. destination managers. Thus, this research paper proposes to make tourism development more achievable through the application of ICT by destination managers by focusing on ‘*Tourism Destination Development and Uses of Information & Communication Technology Based Applications*’.

Objective

Alongside the above literature, the study has objectives. (I) To investigate the uses of information and communication technology at tourism destination as well as respondents' attitudes towards its role in destination development and (II) To identify the ICT-based tools/applications that can be used by destination managers for tourism development.

Methodology

The overarching aim of this research was to investigate the uses and applications of ICT for tourism development.

The approaches used were both secondary and primary. The secondary methods will consist of essential literature search, relevant studies for determining existing ICT-based tools/applications that established the theoretical framework for accomplishing the aims and objectives. The present study is based on primary research. The area for the research was three states of north India i.e. Delhi, Haryana and Punjab. The primary data was collected from staff of various tourist complexes and tourist destinations and ICT professionals from private sector and public sector both. The research instrument used for this paper was questionnaires by adopting convenient sampling. The survey form was distributed to 450 respondents but only 300 were completely filled up by the respondents.

Findings

The findings of the paper are divided into three sections: Respondents characteristics, Responses regarding ICT usage & role in destination development, and Selection of ICT-based tools/applications for tourism development.

Respondents Characteristics

Most respondents fell into the age group of 31- 40 (41%). Almost one-third of respondents were aged between 41-50 (32%), whilst 14% were in the category of 21-30. The remaining 13% respondents were 51-60. The majority of respondents were male (71%). Rest of the respondents were female i.e. 29%. Most of respondents were post graduate consisting 51% of the study population followed by 32%

who were only graduate and remaining 17% were above post graduate either doctoral or professional degree. A large part of the study population were tourism professionals (destination managers) i.e. 67% , followed by 21% ICT professionals and only 12% were others (research students and IT educators) from ICT field.

(Exhibit: I)

Characteristics		Percentage
Gender	Male	71
	Female	29
Age (in years)	21-30	14
	31-40	41
	41-50	32
	51-60	13
Education	Graduate	32
	Post Graduate	51
	Above Post Graduate	17
Occupation	Tourism Professionals	67
	ICT Professionals	21
	Students	12

Uses of ICT at Destination

Respondents identified that they were all using ICT to some extent in their business operations. 21% of respondents used ICT as a tool for marketing & promotion activities for destination, highest portion 27% were respond in respect of collection & distribution of information. 19% were used in administrative & human resource management system, 11% used for customer relationship management, 14% respondents used ICT in sales and distribution related activities and the remaining 8% respondents used ICT as a measure to forecasting, planning and maintenance of destination operation as seen in **Exhibit-II**.

Uses of ICT at Destination	Percentage
Marketing & Promotion	21
Collection & Distribution of Information	27
Administrative & Human Resource Operations	19
Customer Relationship Management	11
Sales & Distribution Channel	14
Forecasting, Planning & Maintenance	8

Role of ICT in Destination Management

Almost half (41%) of respondents strongly agreed that ICT has led to the better management of destinations, with (32%) agreed, 14% neutral, only 8% disagree and 5% strongly disagree as seen in the **Exhibit III**.

ICT as a Better Destination Management Tool	Percentage
Strongly Agree	41
Agree	32
Neutral	14
Disagree	8
Strongly Disagree	5

Selection of ICT-based Tools/Applications for future destination development

Exhibit IV identified the ICT-based tools/applications that can be used for tourism development. The ICT based application further sub divided the activities that can be used under the head of particular of application for tourism development.

Exhibit IV

ICT based Tools/ Application	Percentage	Used for Tourism Development
Destination Management System	26	<ul style="list-style-type: none"> • Marketing & Promotion • Information Management • Website & Online Bookings • Reduce Print material • Accommodation & Attraction Management
Tourist Information System	22	<ul style="list-style-type: none"> • Information Management • Managing tourist flows • Monitoring • Maintaining Feedback system • Tourist education & awareness campaigns
Virtual Tourism System	18	<ul style="list-style-type: none"> • Identify Sites • Information Gathering • Know about tourist behavior • Lead to new tourist destinations

		<ul style="list-style-type: none"> • Economic Impact Model
Environment Management Information System	14	<ul style="list-style-type: none"> • Management of Environmental Issues • Monitoring of Energy • Monitoring of Wastages • Managing Sustainable Tourism
Geographical Information System	11	<ul style="list-style-type: none"> • Geographical data on tourist maps • Identification of destination Location • Visitor Profile region • Development of control system • Global positioning system • Mapping visitor location
Transport Management System	9	<ul style="list-style-type: none"> • Providing Transport Information • Measure to manage traffic control • Destination Transport Management

Almost one fourth of the respondents (26%) stated that ICT based tools/application can be used for destination management system. 22% respondents said the ICT based application can be used to maintain tourism information system. A total of 18% respondents responded to used ICT application as a virtual tourism system. The respondents who supported to used ICT application as environment management information system were 14% followed by those who supported to use ICT based application for geographical information system (11%) and remaining 9% responded in support to use ICT application as a tool for transport management system.

Conclusion

From the results, it is evident that ICT can be used in a variety of ways for managing tourism destination development. It acknowledged that destination managers had some level of awareness of the use of ICT for tourism development and they recognized the importance of doing so but yet in reality it was not being carried out in practice. These results also described a number of opportunities that exist in destination management for using ICT and a number of ICT-based tools/applications in support of these opportunities. It identified that the use of ICT for destination development can be a new, innovative approach for dealing with some of the negative impacts of tourism. Furthermore, these findings elucidated that factors exist which influence destination managers' selection and the type of DMOs that use these ICT-based tools/applications. ICT can be used to manage overall development of tourism destinations. The present research paper has identified a collection of ICT-based

tools/applications for use by destination managers and developed assessment procedures for use of these tools.

The tourism destinations will become more pragmatic through the innovative use of ICT for destinations. The present research has painted a representative landscape of the current research of ICT and tourism development, laid the foundation for future research efforts to enhance this area of knowledge and the theoretical progression of ICT and tourism. This research broadens and deepens the existing knowledge and understanding of mechanisms for development of destinations by applying ICT, with the anticipation that the results will be used by destination managers and DMOs as part of their strategy in dealing with the sustainability concerns of tourism destinations. They need to strengthen their activities and build their competences. They need to be proactive and fully pursue the uses and development of ICT based tools for managing the tourism development of their destinations.

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